

IN THE SPECIFICATION:

Please amend the paragraph at column 1, lines 25-35 as follows:

In recent years, a magneto-optical recording medium has become a subject of attention in the field of a rewritable recording method of high recording density. In such a recording method, information or data is recorded in the recording medium by forming a magnetic domain in a magnetic film of the medium by means of thermal energy of laser beams emitted from a semiconductor laser, and information is read out from the medium, utilizing magneto-optical effect. The above-noted trend is based on need for a larger amount of recording capacity to be achieved by higher recording density of such a recording medium.

Please amend the paragraph at column 2, line 32-37 as follows:

However, in such a super-resolution medium comprising the in-plane magnetization film, only the high-temperature area within a light spot is a reproducible area. It is thus difficult to stably provide a reproduction area having a predetermined space, and signal output is possibly decreased because the reproduction area is at the edge of the light spot.

Please amend the paragraph at column 7, line 1 to column 8, line 14 as follows:

$$K_{\perp} = Ku + \frac{\sigma_w}{4h_1} - 2\pi Ms^2$$

As shown in FIG. 6, the readout layer is subjected to the exchange coupling force from the recording layer at room temperature (RT), but energy of a demagnetizing field is dominant because of large  $M_s$  within a low-temperature region near room temperature. As a result, the following relation 6 is obtained, and the readout layer becomes an in-plane magnetization film.

$$Ku + \frac{\sigma_w}{4h_1} < 2\pi Ms^2, K_{\perp} < 0$$

Similar to the above example, in a portion of the magneto-optical recording medium where the temperature increases due to projection of the readout laser beam,  $M_s$  of the readout layer decreases, and thus  $2\pi Ms^2$  rapidly decreases. As a result, the above relation is reversed, as shown by the following relation 7, and the readout layer becomes a perpendicular magnetization film.

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$$Ku + \frac{\sigma_w}{4hl} > 2\pi Ms^2, K_{\perp} < 0$$

However, in a high-temperature region within the light spot, like at room temperature, the readout layer is an in-plane magnetization film.

The intermediate layer functions as a mediator of exchange coupling force from the recording layer to the readout layer, until its Curie temperature is reached, and information in the recording layer is transferred to the readout layer.

However, in the high-temperature portion within the light spot, the temperature of the intermediate layer reaches its Curie temperature. The intermediate layer has such a composition that Curie temperature is reached, or laser power is set so that Curie temperature is reached. In this portion, thus, the exchange coupling force is eliminated, and the perpendicular magnetic anisotropy constant of the readout layer rapidly decreases in appearance. Therefore, the magnetization direction of the readout layer becomes an in-plane direction again (refer to FIG. 6). Namely, the energy of the interface domain walls between the readout layer and the recording layer becomes 0, and the following relation (8) is obtained:

$$Ku < 2\pi Ms^2, K_{\perp} < 0$$

Like the two-layer structure, therefore, only the medium-temperature region becomes an aperture region, thereby realizing super-resolution.

In such a case where the intermediate layer is formed, which has low Curie temperature, the readout layer can be an in-plane magnetization film at room temperature and raised temperatures and be a perpendicular magnetization film at intermediate temperatures therebetween in its layered structure together with the intermediate and recording layers, though the readout layer has no characteristic that the layer structure in its single layer state returns to an in-plane magnetization film at raised temperatures. Thus, the recording medium comprising the intermediate layer is advantageous in that material can be selected from a wider range.

Since the intermediate layer need not to contribute to the magneto-optic effect, reproduction characteristic do not deteriorate even if Curie temperature is set to a low value.

Although, in the above description, it is assumed for convenience sake that the width of the interface magnetic domain walls between the readout layer and the recording layer can be neglected, the above description applies to a case where the interface magnetic domain walls enter the readout layer to have a thickness which cannot be neglected. However, when the interface magnetic domain walls between the readout layer and the recording layer occur on the side of the readout layer, magnetization of the recording layer is transferred to a portion of the readout

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layer, as in the state of spin orientation schematically shown in FIGS. 7(a) and 7(b). If the interface magnetic domain walls become too thick, therefore, it is difficult to completely mask magnetization information recorded in the recording layer. It is thus preferable to thicken the readout layer or increase the in-plane anisotropy in the low-temperature region.

Please amend the paragraph at column 9, lines 48-51 as follows:

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FIGS. 10(a) through 10(c)1 show an example of temperature tendencies of saturation magnetization of the readout layer, the intermediate layer and the recording layer, which satisfy the above conditions.

Please amend the paragraph at column 10, lines 56-67 as follows:

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Results of measurement of recording-reproducing characteristics of the magneto-optical recording medium were as follows. A measuring instrument comprised an objective lens of 0.55 N.A. and a projector for outputting a laser beam of 780 nm wavelength. Power for recording was preset at 8 mW, and linear velocity was 9 m/sec. Then, 6-15 MHz carrier signal was recorded in the recording layer by using a field modulation system in which a magnetic field of  $\pm 2000$  e was applied stepwise. The dependency of C/N ratio on the recorded mark length was measured. The reproducing power was set to a value (2.5 to 3.5 mW) so that C/N ratio is maximized.

Please amend the paragraph at Column 12, line 21, "to" should read --so--.

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The composition of the TbFeCo recording layer was set so that the layer is TM-rich and has a saturation magnetization of 200 emu/cc, and its Curie temperature is 220° C.